

## PROV

This document was created in the context of the ASCH project<sup>1</sup>. It analysis the applicability of PROV according to the requirements defined by the ASCH project.

PROV is a generic data model for the description of provenance information and the change of this information on the WWW. Defining provenance “as a record that describes the people, institutions, entities, and activities involved in producing, influencing, or delivering a piece of data or a thing”<sup>2</sup>, PROV defines a set of properties and classes useful to describe the provenance of a resource. Information that goes beyond this is not in the scope of PROV.

The documentation of PROV is online available via the PROV-Overview<sup>3</sup> and a detailed description of the terms can be find at the PROV-Ontology<sup>4</sup>. PROV terms are differentiated by granularity and scope in

- starting point classes and properties providing the basis of the Ontology,
- expanded classes and properties providing additional terms,
- qualified classes and properties providing elaborated information,
- PROV-LINKS

Rather developed as an RDF based model PROV may also be used with xml<sup>5</sup> and is therefore application independent.

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<sup>1</sup> <http://asch.wiki.gwdg.de/index.php/asch>About>

<sup>2</sup> <http://www.w3.org/TR/2013/REC-prov-dm-20130430/>

<sup>3</sup> <http://www.w3.org/TR/2013/NOTE-prov-overview-20130430/>

<sup>4</sup> <http://www.w3.org/TR/2013/REC-prov-o-20130430/>

<sup>5</sup> <http://www.w3.org/TR/2013/NOTE-prov-xml-20130430/>

Resource	Superclass of all classes used in the model	Entity	Resource	<a href="http://www.w3.org/2000/01/rdf-schema#Resource">http://www.w3.org/2000/01/rdf-schema#Resource</a>	This is the class of all resources	ex:myItem a rdf:Resource .	✓
[Requirement 6]	Resources must be identified by identifiers that are unique, machine readable and persistent.				.	<a href="http://d-nb.info/gnd/118624792">http://d-nb.info/gnd/118624792</a> a prov:Agent .	✓
[Requirement 7]	Resources must be identified by a name/appellation that allows to distinguish between resources of the same type	Property		Out of scope.			X
[Requirement 8]	The nature of a resource must be described using 1-n controlled values.	Property		Out of scope.			X
[Requirement 9]	Resources can be interlinked with 0-n other resources.	Occurrence		According to the xsd specification some properties are not repeatable (e.g. prov:startTime).			(✓)
[Requirement 10]	Resources must be interlinked with each other using unique, machine readable and persistent identifiers.	Values		All instances of PROV classes must be identified by Semantic Web compliant identifiers.		<DE-MUS-076017/lido/901> a prov:Entity , prov:wasAttributedTo < <a href="http://d-nb.info/gnd/118501267">http://d-nb.info/gnd/118501267</a> > .	✓
[Requirement 11]	The nature of the relation between two resources can be specified using controlled values.	Property	hadRole	<a href="http://www.w3.org/ns/prov#hadRole">http://www.w3.org/ns/prov#hadRole</a>	A role is the function of an entity or agent with respect to an activity, in the context of a usage, generation, invalidation, association, start and end.	:living a prov:Activity; prov:atLocation < <a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a> >; prov:startedAtTime "2007"; prov:qualifiedAssociation [ a prov:Association; prov:agent < <a href="http://d-nb.info/gnd/131724126">http://d-nb.info/gnd/131724126</a> >; prov:hadRole :resident; ] .	✓
[Requirement 12]	The relation between two resources can be specified by the time this relation was valid.	Property	startedAtTime	<a href="http://www.w3.org/ns/prov#startedAtTime">http://www.w3.org/ns/prov#startedAtTime</a>	The time at which an activity started.		✓
			endedAtTime	<a href="http://www.w3.org/ns/prov#endedAtTime">http://www.w3.org/ns/prov#endedAtTime</a>	The time at which an activity ended.		
[Requirement 71]	Topics of information resources must be described using controlled values	Property		Out of scope.			X
[Requirement 72]	Resources used as access points must be identified as instances of one or	Property		Out of scope.			X

	more classes.						
<b>Metadata Set</b>	<b>The machine readable description of a single resource by statements.</b>	<b>Entity</b>	<b>prov:Bundle</b>	<b><a href="http://www.w3.org/ns/prov#Bundle">http://www.w3.org/ns/prov#Bundle</a></b>	<b>A bundle is a named set of provenance descriptions, and is itself an Entity, so allowing provenance of provenance to be expressed.</b>	<b>&lt;<a href="http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817">http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817</a>&gt; a prov:Bundle</b>	<b>✓</b>
[Requirement 1]	Resource descriptions must be machine readable.			PROV provides a machine readable structured description of resources in RDF and XML.			✓
[Requirement 2]	Resource descriptions must be compliant to the one-to-one principle			PROV provides different Classes to differentiate between different resources (e.g. between the Entity and the Activity).			✓
[Requirement 3]	A resource description must provide all attributes necessary to identify the resource and distinguish it from other resources of the same type.	Property		PROV provides a set of terms to describe relations relevant for the description of provenance. For further descriptions PROV recommends the use of other metadata standards (e.g. FOAF for the description of agents).			✓
[Requirement 4]	Resource descriptions must be identified by identifiers that are unique, machine readable and persistent.			A bundle is an entity identified by an id (see <a href="http://www.w3.org/TR/2013/REC-prov-dm-20130430/#term-bundle-entity">http://www.w3.org/TR/2013/REC-prov-dm-20130430/#term-bundle-entity</a> )		< <a href="http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817">http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817</a> > a prov:Bundle	✓
[Requirement 5a]	Creation of resource descriptions must be documented by time stamps.	Property	generatedAtTime	<a href="http://www.w3.org/ns/prov#generatedAtTime">http://www.w3.org/ns/prov#generatedAtTime</a>	The time at which an entity was completely created and is available for use.	< <a href="http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817">http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817</a> > a prov:Bundle; prov:generatedAtTime "2010-22-06T13:54:13Z"^^xsd:dateTime;	✓
[Requirement 5b]	Modification of resource descriptions must be documented by time stamps.	Property	generatedAtTime	<a href="http://www.w3.org/ns/prov#generatedAtTime">http://www.w3.org/ns/prov#generatedAtTime</a>	The time at which an entity was completely created and is available for use.	:myBundeRev a prov:Bundle; prov:wasRevisionOf < <a href="http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817">http://gdz.sub.uni-goettingen.de/mets_export.php?PPN=PPN556861817</a> >; prov:generatedAtTime "2012-07-08T11:33:02Z"^^xsd:dateTime;	✓
[Requirement 63]	Resource descriptions must include	Property		Out of scope.			✗

	information about the reusability of these descriptions (e.g. license information)						
[Requirement 64]	Resource descriptions must be compliant to a cross-domain or domain-specific metadata standard.			PROV is a cross-domain standard used for the description of provenance			✓
[Requirement 65]	Resource descriptions must refer to the used metadata standard(s)	Property		In dependence on the syntax there are different possibilities to describe the used standard (e.g. <a href="http://www.w3.org/TR/2013/NOTE-prov-xml-20130430/#prov-namespace">http://www.w3.org/TR/2013/NOTE-prov-xml-20130430/#prov-namespace</a> ).			✓
Item	A real world thing in a collection	Entity	Entity	<a href="http://www.w3.org/ns/prov#Entity">http://www.w3.org/ns/prov#Entity</a>	An entity is a physical, digital, conceptual, or other kind of thing with some fixed aspects; entities may be real or imaginary.	<DE-MUS-789911/lido/Wig74> a prov:Entity; .	✓
[Requirement 13]	Item descriptions can be interlinked with evidence.	Property	wasInfluencedBy	<a href="http://www.w3.org/ns/prov#wasInfluencedBy">http://www.w3.org/ns/prov#wasInfluencedBy</a>	Influence is the capacity of an entity, activity, or agent to have an effect on the character, development, or behavior of another by means of usage, start, end, generation, invalidation, communication, derivation, attribution, association, or delegation.	:myBundle a prov:Entity; prov:wasInfluencedBy < <a href="http://telota.bbaw.de/AvHBriefedition/#/1">http://telota.bbaw.de/AvHBriefedition/#/1</a> >;	✓
[Requirement 20]	Item descriptions must be interlinked with 1-n events in the lifecycle of the item.	Property	wasInfluencedBy	<a href="http://www.w3.org/ns/prov#wasInfluencedBy">http://www.w3.org/ns/prov#wasInfluencedBy</a>	Influence is the capacity of an entity, activity, or agent to have an effect on the character, development, or behavior of another by means of usage, start, end, generation, invalidation, communication, derivation, attribution, association, or delegation.	<DE-MUS-789911/lido/Wig74> a prov:Entity; . prov:wasInfluencedBy :CollectionEvent;	✓
[Requirement 75]	Items must be identified by identifiers that are unique, machine	Property				<DE-MUS-789911/lido/Wig74> A prov:Entity	✓

	readable and persistent.						
[Requirement 76]	Items must be identified by a name or appellation.	Property		Out of scope.			X
[Requirement 42]	For items a digital representation/copy can be available.	Property		Out of scope.		<ore:Aggregation rdf:about="ex:myAggregation" ><edm:aggregatedCHO rdf:resource=" DE-MUS- 789911/lido/Wig74"/><edm:isS hownBy rdf:resource="urn:nbn:de:bsz:1 05-db- id4104242509"/></ore:Aggrega tion>	X
[Requirement 44]	Items can be represented by digital representations in different resolutions.	Property		Out of scope.		<edm:object rdf:resource="http://digital.ub. tu- freiberg.de/fileadmin/data/410 424250/410424250_tif/jpegs/0 0000001.tif.large.jpg"/><edm:h asView rdf:resource="http://digital.ub. tu- freiberg.de/fileadmin/data/410 424250/410424250_tif/jpegs/0 0000001.tif.small.jpg"/>	X
[Requirement 51]	Item descriptions must be assigned to 1-n collections.	Property	wasMemberOf	Recommended inverse name of prov:hadMember		<http://digital.ub.tu- freiberg.de/fileadmin/data/410 424250/410424250_tif/jpegs/0 0000001.tif.large.jpg> a prov:Entity; prov:wasMemberOf <http://digital.ub.tu- freiberg.de/fileadmin/data/410 424250/410424250_tif/jpegs/0 0000001.tif.small.jpg>;	✓
[Requirement 52]	All items of a collection must be interlinked with the collection using unique, machine readable and persistent identifiers.						✓
[Requirement 77]	Item descriptions must interlink with information about the current	Property	atLocation	http://www.w3.org/ns/prov#atLocation	A location can be an identifiable geographic place	:myPainting a prov:Entity;	✓










	location of the item.				(ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.	prov:atLocation <http://vocab.getty.edu/tgn/7005246>;	
[Requirement 59]	Item descriptions must provide machine readable information about the accessibility and usability of items.	Property		Out of scope.		<dc:rights>Items of this project can only be read and used by members of myProject</dc:rights>	X
<b>Evidence</b>	<b>A resource proving the reliability of a statement about a resource.</b>	<b>Entity</b>					X
[Requirement 15]	Evidences can be machine readable.			Out of scope.			X
[Requirement 16]	The nature of an evidence must be described by 1-n controlled values	Property		Out of scope.		<edm.hasType rdf:resource="http://purl.org/dc/terms/BibliographicResource"/>	X
[Requirement 17]	Information about resources in an evidence must be identified by unique identifiers.	Property		Out of scope.			X
[Requirement 18]	Information about the nature of a resource in an evidence must be identified by 1-n controlled values.	Property		Out of scope.			X
[Requirement 78]	Evidence descriptions must provide information about the accessibility and reusability of the resource.	Property		Out of scope.			X
<b>Event</b>	<b>An activity in the lifecycle of a resource</b>	<b>Entity</b>	<b>Activity</b>	<b><a href="http://www.w3.org/ns/prov#Activity">http://www.w3.org/ns/prov#Activity</a></b>	<b>An activity is something that occurs over a period of time and acts upon or with entities.</b>	<b>&lt;IKUOECATGBTMKHK33KI3V2DKVUGO7YI7&gt; a prov:Activity;</b>	✓
[Requirement 79]	Event descriptions can be interlinked with evidence about the event (e.g. documents)	Property	wasInfluencedBy	<a href="http://www.w3.org/ns/prov#wasInfluencedBy">http://www.w3.org/ns/prov#wasInfluencedBy</a>	Influence is the capacity of an entity, activity, or agent to have an effect on the character, development, or behavior of another by means of usage, start, end, generation, invalidation, communication, derivation, attribution, association, or	<IKUOECATGBTMKHK33KI3V2DKVUGO7YI7> a prov:Activity; prov:wasInfluencedBy < <a href="http://telota.bbaw.de/AvHBriefedition/#/1">http://telota.bbaw.de/AvHBriefedition/#/1</a> >;	✓

					delegation.		
[Requirement 21]	Event descriptions must be machine readable.			PROV provides a machine readable structured description of activities in RDF and XML.			✓
[Requirement 22]	Event descriptions must show the nature of the relation between items, agents, places and/or time.	Property		Out of scope.			✗
[Requirement 23]	An event in the lifecycle must be related to 1-n items.	Property	influenced	<a href="http://www.w3.org/ns/prov#influenced">http://www.w3.org/ns/prov#influenced</a>	Influence is the capacity of an entity, activity, or agent to have an effect on the character, development, or behavior of another.	:CollectionEvent a prov:Activity; influenced <DE-MUS-789911/lido/Fr70>;	✓
[Requirement 24]	An event in the lifecycle of an item must be related to 0-n agents	Property	wasAssociatedWith	<a href="http://www.w3.org/ns/prov#wasAssociatedWith">http://www.w3.org/ns/prov#wasAssociatedWith</a>	An activity association is an assignment of responsibility to an agent for an activity, indicating that the agent had a role in the activity.	:CreationEvent a prov:Activity; prov:wasAssociatedWith < <a href="http://d-nb.info/gnd/118501267">http://d-nb.info/gnd/118501267</a> >;	✓
[Requirement 25]	The function/role of an agent during an event must be specified using controlled values (e.g. creator, dealer, collector).	Property	hadRole	<a href="http://www.w3.org/ns/prov#hadRole">http://www.w3.org/ns/prov#hadRole</a>	A role is the function of an entity or agent with respect to an activity, in the context of a usage, generation, invalidation, association, start and end.	:CreationEvent a prov:Activity; prov:qualifiedAssociation [ a prov:Association; prov:agent < <a href="http://d-nb.info/gnd/118501267">http://d-nb.info/gnd/118501267</a> >; prov:hadRole < <a href="http://d-nb.info/gnd/4037215-7">http://d-nb.info/gnd/4037215-7</a> >; ] .	✓
[Requirement 26]	An event in the lifecycle of an item must be related to 0-n places.	Property	atLocation	<a href="http://www.w3.org/ns/prov#atLocation">http://www.w3.org/ns/prov#atLocation</a>	A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.	:CollectionEvent a prov:Activity; prov:atLocation < <a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a> >;	✓
[Requirement 27]	An event in the lifecycle of an item must be related to 0-n date information.	Property	startedAtTime	<a href="http://www.w3.org/ns/prov#startedAtTime">http://www.w3.org/ns/prov#startedAtTime</a>	The time at which an activity started.	:CreationEvent a prov:Activity; prov:startedAtTime "1954"; prov:endedAtTime "1959"	✓

			endedAtTime	<a href="http://www.w3.org/ns/prov#endedAtTime">http://www.w3.org/ns/prov#endedAtTime</a>	The time at which an activity ended.		
<b>Time</b>	<b>A time span related to a resource via an activity or as a topic</b>	<b>Entity</b>					<b>X</b>
[Requirement 29]	Date and time indication must be machine readable.	Property	startedAtTime	<a href="http://www.w3.org/ns/prov#startedAtTime">http://www.w3.org/ns/prov#startedAtTime</a>	The time at which an activity started.	:CreationEvent a prov:Activity; prov:startedAtTime "1954"; prov:endedAtTime "1959"	✓
			endedAtTime	<a href="http://www.w3.org/ns/prov#endedAtTime">http://www.w3.org/ns/prov#endedAtTime</a>	The time at which an activity ended.		
[Requirement 30]	Date information must be compliant to date type standards.	Datatype	dateTime	All properties describing date information have range prov:generatedAtTime "2010-22-06T13:54:13Z"^^xsd:dateTime.		prov:generatedAtTime "2010-22-06T13:54:13Z"^^xsd:dateTime;	✓
[Requirement 80]	A human readable form of date information can only be used in addition to a machine readable form.	Value		Out of scope.			<b>X</b>
[Requirement 81]	A human readable form of date information can use values of a controlled vocabulary.	value		Out of scope.			<b>X</b>
<b>Agent</b>	<b>A person, organization or group related to a resource via an activity or as a topic.</b>	<b>Entity</b>	<b>Agent</b>	<a href="http://www.w3.org/ns/prov#Agent">http://www.w3.org/ns/prov#Agent</a>	<b>An agent is something that bears some form of responsibility for an activity taking place, for the existence of an entity, or for another agent's activity.</b>	<b>&lt;http://d-nb.info/gnd/118501267&gt; an Agent ;</b>	<b>✓</b>
[Requirement 32]	Agents must be identified by name and biographical information.	Property		Out of scope.			<b>X</b>
[Requirement 33]	Agents must be identified by identifiers that are unique, machine readable and persistent.	Property				<http://d-nb.info/gnd/118501267> an Agent ;	✓
[Requirement 34]	Agent descriptions can interlink with resources related to the agent.	Property	contributed	Recommended inverse name of prov:wasAttributedTo		<http://d-nb.info/gnd/118501267> a prov:Agent; prov:contributed <DE-MUS-076017/lido/901>;	✓



[Requirement 35]	Agent descriptions must be machine readable.			PROV provides only terms for a machine readable structured description of the relations between agents, activities and entities.			✓
[Requirement 36]	Agent descriptions can interlink with places related to the agent.	Property	atLocation	<a href="http://www.w3.org/ns/prov#atLocation">http://www.w3.org/ns/prov#atLocation</a>	A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.	<http://d-nb.info/gnd/118554700> a prov:Agent; prov:atLocation <http://vocab.getty.edu/tgn/7005246>;	✓
[Requirement 37]	The relation between an agent and a place can be specified by the character of the relation (e.g. visitor or resident)	Property	hadRole	<a href="http://www.w3.org/ns/prov#hadRole">http://www.w3.org/ns/prov#hadRole</a>	A role is the function of an entity or agent with respect to an activity, in the context of a usage, generation, invalidation, association, start and end.	:living a prov:Activity; prov:atLocation < <a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a> >; prov:startedAtTime "2007"; prov:qualifiedAssociation [ a prov:Association; prov:agent <http://d-nb.info/gnd/131724126>; prov:hadRole :resident; ] . <edm:Actor rdf:about="http://d-nb.info/gnd/118554700"><edm:wasPresentAt rdf:resource="ex:myTripToGoettingen"/></edm:Actor> <edm:Event rdf:about="ex:myTripToGoettingen"><edm:happenedAt rdf:resource="http://vocab.getty.edu/tgn/7005246"/><edm:occurredAt rdf:resource="ex:myTimeSpan"/></edm:Event>	✓
[Requirement 38]	The relation between an agent and a place can be specified by the time this relation was valid.	Property	startedAtTime	<a href="http://www.w3.org/ns/prov#startedAtTime">http://www.w3.org/ns/prov#startedAtTime</a>	The time at which an activity started.		✓
			endedAtTime	<a href="http://www.w3.org/ns/prov#endedAtTime">http://www.w3.org/ns/prov#endedAtTime</a>	The time at which an activity ended.		

<b>Place</b>	<b>A geographic location related to a resource via an activity or topic.</b>	<b>Entity</b>	<b>Location</b>	<b><a href="http://www.w3.org/ns/prov#Location">http://www.w3.org/ns/prov#Location</a></b>	<b>A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.</b>	<b>&lt;<a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a>&gt; a prov:Location;</b>	
[Requirement 39]	Places must be identified by identifiers that are unique, machine readable and persistent.	Property				< <a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a> > a prov:Location;	
[Requirement 40]	Places must be identified by machine readable geo-information / geographic coordinates	Datatype		Out of scope.			
[Requirement 41]	Place descriptions can include 1-n place appellations.	Property		Out of scope.			
<b>Digital Representation</b>	<b>A digital resource depicting an item</b>	<b>Entity</b>	<b>Entity</b>	<b><a href="http://www.w3.org/ns/prov#Entity">http://www.w3.org/ns/prov#Entity</a></b>	<b>An entity is a physical, digital, conceptual, or other kind of thing with some fixed aspects; entities may be real or imaginary.</b>	<b>&lt;<a href="http://nbn-resolving.org/urn:nbn:de:bsz:105-db-id4104242509">urn:nbn:de:bsz:105-db-id4104242509</a>&gt; a prov:Entity</b>	
[Requirement 43]	A digital representation/copy must enable the identification of the item it represents.			Out of scope.			
[Requirement 45]	The nature of a digital representation must be described using a controlled value.	Property		Out of scope.			
[Requirement 60]	Descriptions of digital representations must provide information about the reusability of the digital representation (e.g. license).	Property		Out of scope.			
[Requirement 61]	Descriptions of a digital representation must provide contact information related to the usability of	Property		Out of scope.			

	a digital copy.						
[Requirement 82]	Digital representations must be identified by identifiers that are unique, machine readable and persistent.	Property				<urn:nbn:de:bsz:105-db-id4104242509> a prov:Entity	✓
<b>Collection</b>	<b>An aggregation of items:</b>	<b>Entity</b>	<b>Collection</b>	<b><a href="http://www.w3.org/ns/prov#Collection">http://www.w3.org/ns/prov#Collection</a></b>	<b>A collection is an entity that provides a structure to some constituents, which are themselves entities.</b>	<b><a href="http://ld.zdb-services.de/resource/organisations/DE-MUS-056315">http://ld.zdb-services.de/resource/organisations/DE-MUS-056315</a> a prov:Collection</b>	✓
[Requirement 46]	Collection descriptions must be machine readable.			PROV provides a machine readable structured description of resources in RDF and XML.			✓
[Requirement 47]	Collections must be identified by identifiers that are unique, machine readable and persistent.	Property				< <a href="http://ld.zdb-services.de/resource/organisations/DE-MUS-056315">http://ld.zdb-services.de/resource/organisations/DE-MUS-056315</a> > a prov:Collection	✓
[Requirement 48]	Collections must be identified by an explicit name.	Property		Out of scope.			✗
[Requirement 49]	Collection descriptions must include information about the location/place of the collection.	Property	atLocation	<a href="http://www.w3.org/ns/prov#atLocation">http://www.w3.org/ns/prov#atLocation</a>	A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.	< <a href="http://ld.zdb-services.de/resource/organisations/DE-MUS-056315">http://ld.zdb-services.de/resource/organisations/DE-MUS-056315</a> > a prov:Collection ; prov:atLocation < <a href="http://vocab.getty.edu/tgn/7005246">http://vocab.getty.edu/tgn/7005246</a> > ;	✓
[Requirement 50]	Collection descriptions must be compliant to a cross-domain metadata standard.			Out of scope			✗
<b>Statement</b>	<b>A predication about an item.</b>	<b>Entity</b>					
[Requirement 31]	A statement can be interlinked with date information.	Property	atTime	<a href="http://www.w3.org/ns/prov#atTime">http://www.w3.org/ns/prov#atTime</a>	The time at which an InstantaneousEvent occurred.	< <a href="http://d-nb.info/gnd/4779711-3">http://d-nb.info/gnd/4779711-3</a> > a prov:Activity; prov:qualifiedUsage [ a prov:Usage; prov:entity < <a href="http://d-nb.info/gnd/4056546-4">http://d-nb.info/gnd/4056546-4</a> >; prov:atTime "2001"; ];	✓

[Requirement 53]	All statements must be repeatable.	Property		According to the xsd specification some properties are not repeatable (e.g. prov:startTime).			X
[Requirement 73]	Statements can be interlinked with information about their origin.	Property					X
[Requirement 74]	Statements can be interlinked with resources.	Property					X
[Requirement 54]	Statements can be interlinked with resources proving their reliability.	Property					X
[Requirement 55]	Inconsistency of statements is allowed if the metadata refers to the origin of the statements.	Validation		Out of scope.			X
[Requirement 86]	A statement can be related to 0-n places.	Property	atLocation	<a href="http://www.w3.org/ns/prov#atLocation">http://www.w3.org/ns/prov#atLocation</a>	A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.	<code>&lt;http://d-nb.info/gnd/4779711-3&gt; a prov:Activity; prov:qualifiedUsage [ a prov:Usage; prov:entity &lt;http://d-nb.info/gnd/4056546-4&gt;; prov:atLocation &lt;http://vocab.getty.edu/tgn/6000612&gt;; ];</code>	✓
<b>Holding</b>	<b>The place an item is located, subclass of place</b>	<b>Entity</b>	<b>Location</b>	<a href="http://www.w3.org/ns/prov#Location">http://www.w3.org/ns/prov#Location</a>	<b>A location can be an identifiable geographic place (ISO 19112), but it can also be a non-geographic place such as a directory, row, or column.</b>	<code>&lt; http://ld.zdb-services.de/resource/organizations/DE-7&gt; a prov:Location;</code>	✓
[Requirement 83]	Holdings must be identified by identifiers that are unique, machine readable and persistent	Property				<code>&lt; http://ld.zdb-services.de/resource/organizations/DE-7&gt; a prov:Location;</code>	✓
[Requirement 84]	Holdings can be identified by machine readable geo-information / geographic coordinates.	Property		Out of scope.			X

[Requirement 85]	Holding descriptions must include 1-n place appellations.	Property		Out of scope.			X
[Requirement 58]	Holding descriptions must provide contact information.	Property		Out of scope.			X
Concept	A term from a controlled vocabulary	Entity	Entity	http://www.w3.org/ns/prov#Entity	An entity is a physical, digital, conceptual, or other kind of thing with some fixed aspects; entities may be real or imaginary.	<http://id.loc.gov/authorities/subjects/sh85138958> a prov:Entity; .	✓
[Requirement 66]	Controlled values used for the description of resources must be values of a domain-specific or a cross-domain standard.	Value		Out of scope.			X
[Requirement 67]	Controlled values used for the description of resources must be identified by identifiers that are unique, machine readable and persistent.	Property				<http://id.loc.gov/authorities/subjects/sh85138958> a prov:Entity; .	✓
[Requirement 68]	The used controlled vocabularies must be available in machine readable form.	Value		Out of scope.			X
[Requirement 69]	The used controlled vocabularies must be available open access.	Value		Out of scope.			X
[Requirement 70]	Synonym appellations must be merged using authorities.	Property		Out of scope.			X